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| 09/820,688  | 03/30/2001  | Koji Naito                                | 018987-032          | 8787             |
| <div>7590 12/21/2009</div> <div>Platon N. Mandros</div> <div>BURNS, DOANE, SWECKER &amp; MATHIS, L.L.P.</div> <div>P.O. Box 1404</div> <div>Alexandria, VA 22313-1404</div> |             |   |                     |                  |
| <div>EXAMINER</div> <div>THOMPSON, JAMES A</div>  |             |   |                     |                  |
| <div>ART UNIT</div> <div>2625</div>   |             | <div>PAPER NUMBER</div>                   |                     |                  |
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

# Office Action Summary

**Application No.**

09/820,688

**Applicant(s)**

NAITO ET AL.

**Examiner**

James A. Thompson

**Art Unit**

2625

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 28 August 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1,3-7,9-13,15-20 and 22-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1,3-7,9-13,15-20 and 22-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-884)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_

**DETAILED ACTION**

***Response to Arguments***

1. Applicant's arguments, see Pre-Appeal Conference Brief, filed 28 August 2009, with respect to the rejections of claims 1, 3-7, 9-13, 15-20 and 22-29 under 35 U.S.C. § 103(a) have been fully considered and are persuasive. Therefore, the rejections have been withdrawn. However, upon further consideration, new grounds of rejection are made in view of newly discovered prior art references.

***Claim Rejections - 35 USC § 103***

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
3. **Claims 1, 3, 5-7, 9, 11-13, 15, 17-20, 22 and 24-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikenoue (US-5,987,127) in view of Numao (US-6,055,321).**

**Regarding claims 1, 7, 13, 19, 20, 26, 27 and 28:** Ikenoue discloses an image forming apparatus (figure 1 of Ikenoue) equipped with an image processing apparatus (figure 1(100) of Ikenoue) that processes inputted first image data so as to output second image data, the image forming apparatus forming an image according to the second image data (column 5, lines 38-51 of Ikenoue), the image processing apparatus comprising: a detecting unit that detects all pieces of additional information that are embedded in the first image data (column 10, lines 24-30 of Ikenoue); a storage unit that stores the detected pieces of additional information in association with location information thereof (figure 9; column 7, lines 38-44; and column 8, lines 38-43 of Ikenoue); an analyzing unit that analyzes the detected pieces of additional information and judges whether any of the detected pieces of additional information includes predetermined information that is updateable (figure 3; column 5, lines 50-64; and column 16, lines 1-10 of Ikenoue - *number of copies is updateable, apparatus recognition code and source number are not updateable*); and an embedding unit that updates, when a judgment result of the analyzing unit is affirmative, the predetermined information included in the piece of additional information

(column 16, lines 1-10 of Ikenoue), and embeds the piece of additional information including the updated predetermined information into the first image data at a location where the piece of additional information is originally embedded, by referring to the stored location information (figures 2-3 and column 6, lines 33-47 of Ikenoue); wherein the first image data embedded with the updated predetermined information is outputted as the second image data (column 5, lines 22-25 of Ikenoue).

Ikenoue does not disclose expressly that the embedding unit (2) embeds, when the judgment result of the analyzing unit is negative, a new piece of additional information including updated information into the first image data at a location that does not overlap locations where the detected pieces of additional information are embedded, by referring to the stored location information, the updated information being equivalent to the predetermined information; and that the first image data embedded with the new pieces of additional information is outputted as the second image data.

Numao discloses embedding, when the additional information is not updateable, a new piece of additional information including updated information into the first image data at a location that does not overlap locations where detected pieces of additional information are embedded, by referring to the stored location information, the updated information being equivalent to the predetermined information (figure 5 and column 8, line 56 to column 9, line 12 of Numao).

Ikenoue and Numao are analogous art because they are from the same field of endeavor, namely watermarking of image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to embed a new piece of additional information in a non-overlapping location when the additional information is not updateable, as taught by Numao. By combination, the first image data embedded with the new pieces of additional information is outputted as the second image data. The motivation for doing so would have been to reduce the noise in the additional information embedding locations, which would be increased if the new pieces of additional information were placed in overlapping locations. Therefore, it would have been obvious to combine Numao with Ikenoue to obtain the invention as specified in claims 1, 7, 13, 19, 20, 26, 27 and 28.

Further regarding claim 1: The apparatus of claim 1 is fully embodied in the apparatus of claim 7.

Further regarding claim 13: The apparatus of claim 7 performs the method recited in claim 13.

Further regarding claim 19: The apparatus of claim 7 performs the method recited in claim 19.

Further regarding claim 20: The apparatus of claim 7 executes the steps of the computer program recited in claim 20.

Further regarding claim 26: The apparatus of claim 26 is fully embodied in the apparatus of claim 1.

Further regarding claim 27: The method of claim 27 is fully

embodied in the method of claim 13.

Further regarding claim 28: The computer-readable medium containing a program of claim 28 is embodied in the computer-readable medium containing a program of claim 20.

**Regarding claims 3, 9, 15 and 22:** Ikenoue discloses that when the analyzing unit analyzes the detected pieces of additional information, the analyzing unit employs a predetermined embedding format used by the embedding unit (figures 3-5; and column 6, lines 50-58; and column 7, lines 51-58 of Ikenoue).

**Regarding claims 5, 11, 17 and 24:** Ikenoue discloses that, when the analyzing unit finds that any of the detected pieces of additional information is unanalyzable (column 13, lines 60-66 of Ikenoue), the analyzing unit judges that the piece of additional information does not include the predetermined information (column 14, lines 4-8 of Ikenoue). Blocks of additional data are analyzed to determine whether or not said blocks of additional data are invalid (column 13, lines 60-66 of Ikenoue). If said block of additional data are invalid, but said invalidity is not due to forgery, said invalid blocks are deleted (column 14, lines 4-8 of Ikenoue). Thus, said invalid blocks clearly do not have said predetermined information.

**Regarding claims 6, 12, 18 and 25:** Ikenoue discloses that the predetermined information includes information about a date

when the image data is processed (column 16, lines 21-22 and lines 33-34 of Ikenoue).

**Regarding claim 29:** Ikenoue discloses an image forming apparatus (figure 1 of Ikenoue) equipped with an image processing apparatus (figure 1(100) of Ikenoue) that processes inputted first image data so as to output second image data, the image forming apparatus forming an image according to the second image data (column 5, lines 38-51 of Ikenoue), the image processing apparatus comprising: a detecting unit that detects all pieces of additional information that are embedded in the first image data (column 10, lines 24-30 of Ikenoue); a storage unit that stores the detected pieces of additional information, the storage unit also stores location information indicating the location of where the detected pieces of additional information are embedded within the image data (figure 9; column 7, lines 38-44; and column 8, lines 38-43 of Ikenoue); an analyzing unit that analyzes the detected pieces of additional information and judges whether any of the detected pieces of additional information includes predetermined information that is updateable (figure 3; column 5, lines 50-64; and column 16, lines 1-10 of Ikenoue - *number of copies is updatable, apparatus recognition code and source number are not updatable*); and an embedding unit that updates, when a judgment result of the analyzing unit is affirmative, the predetermined information included in the piece of additional information (column 16, lines 1-10 of Ikenoue), and embeds the piece of additional information including the updated



predetermined information into the first image data at a location where the piece of additional information is originally embedded, by referring to the stored location information (figures 2-3 and column 6, lines 33-47 of Ikenoue).

Ikenoue does not disclose expressly that the embedding unit (2) embeds, when the judgment result of the analyzing unit is negative, a new piece of additional information including updated information into the first image data at a location that does not overlap locations where the detected pieces of additional information are embedded, by referring to the stored location information, the updated information being equivalent to the predetermined information.

Numao discloses embedding, when the additional information is not updateable, a new piece of additional information including updated information into the first image data at a location that does not overlap locations where detected pieces of additional information are embedded, by referring to the stored location information, the updated information being equivalent to the predetermined information (figure 5 and column 8, line 56 to column 9, line 12 of Numao).

Ikenoue and Numao are analogous art because they are from the same field of endeavor, namely watermarking of image data. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to embed a new piece of additional information in a non-overlapping location when the additional information is not updateable, as taught by Numao.

The motivation for doing so would have been to reduce the noise in the additional information embedding locations, which would be increased if the new pieces of additional information were placed in overlapping locations. Therefore, it would have been obvious to combine Numao with Ikenoue to obtain the invention as specified in claim 29.

**4. Claims 4, 10, 16 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ikenoue (US-5,987,127) in view of Numao (US-6,055,321) and Davis (US-3,760,159).**

**Regarding claims 4, 10, 16 and 23:** Ikenoue discloses a warning unit (figure 13(20) of Ikenoue) that issues, when the additional data is determined to be secret (column 19, lines 60-65 of Ikenoue) and the proper confirmation data is not entered (column 20, lines 3-4 of Ikenoue), a warning to the effect that the copying of the document would be illegal (column 20, lines 5-9 of Ikenoue).

Ikenoue further discloses using the analyzing unit to find if any of the detected pieces of additional information are unanalyzable (column 13, lines 60-66 of Ikenoue).

Ikenoue in view of Numao does not disclose expressly that said warning unit issues, when the analyzing unit finds that any of the detected pieces of additional data is unanalyzable, a warning to the effect that the piece of additional information is unanalyzable.

Davis discloses issuing a warning to the effect that a valid parity does not exist (column 6, lines 16-20 of Davis) in the digital input data (column 5, lines 64-68 of Davis).

Ikenoue in view of Numao is analogous art with respect to Davis because they are from similar problem solving areas, namely the verification of digital information. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to display a warning if the digital data cannot be read properly, as taught by Davis, and is therefore unanalyzable, as taught by Ikenoue. The motivation for doing so would have been to give the operator a visual notification that an error has occurred (column 6, lines 19-20 of Davis). Therefore, it would have been obvious to combine Davis with Ikenoue in view of Numao to obtain the invention as specified in claims 4, 10, 16 and 23.

### ***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to James A. Thompson whose telephone number is (571)272-7441. The examiner can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward L. Coles can be reached on 571-272-7402. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/James A Thompson/  
Primary Examiner  
Art Unit 2625

17 December 2009